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FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER

NGUYEN, KEVIN M

ART UNIT PAPER NUMBER

2674

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/525,021

Applicant(s)

KATSUYUKI KOBAYASHI

Examiner

Kevin M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 230-249 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 230-249 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is made in response to applicant's amendment filed on October 20, 2004. Claims 1-229 are cancelled, claims 230-249 are amended, and claims 230-249 are currently pending in the application. An action follows below:

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 230-239 and 242-249 are rejected under 35 U.S.C. 102(e) as being anticipated by Shaffer et al (newly cited, US 6,050,690).

3. As to claims 230, 244, and 246, Shaffer et al teaches a apparatus associated with a method, the apparatus comprising:

a. A detector 16 (detection device, fig. 3) includes a CCD sensor 40, a CCD output interface 44, an AD converter 46, and a microprocessor 48 (fig. 3, col. 3, lines 41-44) that receive the light. The detector 16 includes an array of CCD sensors 40 (a plurality of photoelectric conversion elements, col. 5, lines 29-30) that arranged in a predetermined physical array.

[recited in lines 5-9 of claim 230]

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b. different signal generating means is defined by the tracking algorithm (fig. 4, col. 4, lines 43). "When a projected image is focused, the difference between the light portions and dark portions of the image, i.e., its contrast, is at its greatest" (col. 5, lines 36-38). Thus, the light portion corresponds to the light cycle of the first point, the dark portion corresponds to the light cycle of the second point. The light portion being at a higher intensity than the dark portion.

[recited in lines 10-11 of claim 230]

c. the threshold setting means is defined by "a focus algorithm (col. 6, lines 15-16), a pixel value P2 is found that is equal to the threshold value VH (step 73)(fig. 7A, col. 6, lines 35-36), a pixel value P3 is found that is greater than or equal to the threshold value VH (step 77)(fig. 7A), and a pixel value P3 is found that is less than or equal to the threshold value VL (step 78)(fig. 7A)."

Thus, pixels value P2 and P3 define the different signal.

VH = P2 and VH = P3. Thus, the threshold values VH is set on the basis of a level of said different signal.

[recited in lines 12-14 of claim 230]

d. Selection means is defined by "the pixels located between P2-P3 are re-scanned (the different signal). Each of the rescanned pixel is then compared to determine whether it is within the range VH to VL (step 86)" (fig. 7B, col. 6, line 65 to col. 7, line 1).

[recited in lines 15-16 of claim 230]

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e. Output means for outputting a different signals is defined by "next, in decision step 88, a check is made to determine whether the current count is greater than the count determined by the immediately prior iteration of steps 84-88" (col. 7, lines 2-5).

4. As to claim 231-233, Shaffer et al teaches the pixels located between P2-P3 are re-scanned (the different signal). Each of the rescanned pixel is then compared to determine whether it is within the range VH to VL (step 86). In step 87, the number of pixels within the range is counted (fig. 7B, col. 6, line 65 to col. 7, line 2).

Thus, according to  $VL \leq PN \leq VH$ , the pixel PN is at the middle of the range of the threshold value [VL-VH] which defined the largest pixel. The values are substantially both sides of the pixel value PN which defined two elements equally spaced from the elements having the greatest pixel.

The pixel PN is substantially near the right side of threshold value VH which defined the greater difference signal. The pixel PN is substantially near the left side of threshold value VL which defined the smaller difference signal.

5. As to claim 234, Shaffer et al teaches  $VL \leq PN \leq VH$ . Thus, the pixel PN is at the middle of the range of the threshold value [VL-VH] which defined the largest pixel. The values are substantially both sides of the pixel value PN which defined two elements are adjacent from the elements having the greatest pixel.

6. As to claims 235 and 236, Shaffer et al teaches compare each pixel PN to VL, VH (step 86), and count the number of pixels PN within the range of the threshold value

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[VL-VH] (step 87, fig. 7B) which define the calculation means for calculating the greatest pixel PN, a centroid pixel PN.

7. As to claim 237, Shaffer et al inherent teaches a storage means.

8. As to claim 238, Shaffer et al teaches a pixel value P2 is found that is equal to the threshold value VH (step 73)(fig. 7A, col. 6, lines 35-36) which defined first integration means.

A pixel value P3 is found that is greater than or equal to the threshold value VH (step 77)(fig. 7A), and a pixel value P3 is found that is less than or equal to the threshold value VL (step 78)(fig. 7A) which defined second integration means.

"When a projected image is focused, the difference between the light portions and dark portions of the image, i.e., its contrast, is at its greatest" (col. 5, lines 36-38).

9. As to claim 239, Shaffer et al teaches a light pen or laser pointer 12 (col. 2, lines 66) which include a light-emitting element.

10. As to claims 242, 245, and 247, Shaffer et al teaches a apparatus associated with a method, the apparatus comprising:

- f. A detector 16 (detection device, fig. 3) includes a CCD sensor 40, a CCD output interface 44, an AD converter 46, and a microprocessor 48 (fig. 3, col. 3, lines 41-44) that receive the light. The detector 16 includes an array of CCD sensors 40 (a plurality of photoelectric conversion elements, col. 5, lines 29-30) that arranged in a predetermined physical array.

[recited in lines 5-9 of claim 242]

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g. different signal generating means is defined by the tracking algorithm (fig. 4, col. 4, lines 43). "When a projected image is focused, the difference between the light portions and dark portions of the image, i.e., its contrast, is at its greatest" (col. 5, lines 36-38). Thus, the light portion corresponds to the light cycle of the first point, the dark portion corresponds to the light cycle of the second point. The light portion being at a higher intensity than the dark portion.

[recited in lines 10-12 of claim 242]

h. the first threshold setting means is defined by a focus algorithm (col. 6, lines 15-16), a pixel value P2 is found that is less than or equal to the first threshold value VH (step 73)(fig. 7A, col. 6, lines 35-36).

[recited in lines 13-17 of claim 242]

i. the second threshold setting means is defined by a pixel value P3 is found that is greater than or equal to the second threshold value VL (step 78)(fig. 7A). According to  $VL \leq PN \leq VH$ , the pixel PN is at the middle of the range of the threshold value [VL-VH] which defined the largest pixel. The values are substantially both sides of the pixel value PN which defined two elements equally spaced from the elements having the greatest pixel.

[recited in lines 18-20 of claim 242]

j. Selection means is defined by the pixels located between P2-P3 are re-scanned (the different signal). Each of the rescanned pixel is then compared to determine whether it is within the range VH to VL (step 86) (fig. 7B, col. 6, line 65 to col. 7, line 1).

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[recited in lines 21-22 of claim 242]

k. Output means for outputting a different signals is defined by next, in decision step 88, a check is made to determine whether the current count is greater than the count determined by the immediately prior iteration of steps 84-88 (col. 7, lines 2-5).

11. As to claim 243, Shaffer et al further teaches the numbers of pixels within the range  $[VL-VH]$  are counted (step 87, fig. 7B), that is  $VL \leq PN \leq VH$ . Next, in decision step 88, a check is made to determine whether the current count is greater than the count determined by the immediately prior iteration of steps 84-88 (col. 7, lines 2-5).

Thus, they are defined the determination whether comparing the first threshold value  $VH=PN$  with the second threshold value  $VL=PN$ .

12. As to claims 248 and 249, Shaffer et al teaches a display system 10 that permits a remote user to control the display of a projected image with a light pen or laser pointer (fig. 1, col. 2, lines 64-66).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 240 and 241 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al in view of Elrod et al (previously cited, US 5,341,155).

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As to claim 240, Shaffer et al teaches all of the claimed limitation of claims 230, except for the light-emitting element positioned adjacent to the screen surface.

However, Elrod et al teaches the light pen 22 being adjacent on the screen surface 20 (see figure 5).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide Shaffer's light pen including the light pen 22 being adjacent on the screen surface 20, in view of the teaching Elrod's reference, because this would provide simultaneously and independently entering position and function information into a large screen area electronic writhing system as taught by Elrod (col. 2, lines 25-27).

14. As to claim 241, Elrod et al reviews a light-emitting pen which diffuses a light spot upon a light-depressive display screen (col. 2, lines 3-4).

#### ***Response to Arguments***

15. Applicant's arguments filed 10/20/2004 have been fully considered but they are not persuasive.

16. In response to applicant's argument that claims 230, 242, 244 and 245-247 recite "the threshold value is set for each photoelectric conversion element, and the threshold value is set based on each different signal" (A). This argument is not persuasive because Shaffer et al teaches the threshold setting means is defined by a focus algorithm (col. 6, lines 15-16), a pixel value P2 is found that is equal to the threshold value VH (step 73)(fig. 7A, col. 6, lines 35-36), a pixel value P3 is found that is greater

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than or equal to the threshold value VH (step 77)(fig. 7A), and a pixel value P3 is found that is less than or equal to the threshold value VL (step 78)(fig. 7A).

Therefore, the teaching of Shaffer's reference provides the "substantial evidence" and established a prima facie case to produce and result the claimed limitation (A).

Thus, pixel value P2 and P3 define the different signal. The threshold value VH = P2 and VH = P3. Thus, the threshold values VH is set on the basis of a level of said different signal.

For these reasons, the rejections based on Shaffer et al have been maintained.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached on **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kevin M. Nguyen  
Patent Examiner  
Art Unit 2674

KN  
January 20, 2005

  
**XIAO WU**  
**PRIMARY EXAMINER**